

# JOURNAL OF THE BOMBAY NATURAL HISTORY SOCIETY

December 1989

Vol. 86

No. 3

## HITHERTO UNREPORTED NEST SITE OF LESSER FLAMINGO *PHOENICONAIAS MINOR* IN THE LITTLE RANN OF KUTCH, GUJARAT<sup>1</sup>

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(With a plate and a text-figure)

### INTRODUCTION

The known principal nesting grounds of the Lesser Flamingo *Phoeniconaias minor* are the soda lakes of Natron and Magadi in East Africa, where the birds usually breed between August and October (Brown *et al.* 1982). More recently, in 1978, the bird has been known to breed on the Makgadikgadi salt pans in Botswana, southern Africa (Robertson and Johnson 1980).

The only breeding site "Flamingo City" in India was discovered in January 1974 in the Great Rann of Kutch in Gujarat, where a colony of between 2000 and 5000 birds were found nesting beside Flamingo *Phoenicopterus roseus* (Ali 1974). The main nesting colony in the Great Rann has not been active since 1977; possible reasons are discussed by Thakker (1982) and Kumar (1986). Though there have been no further record of the bird breeding in Gujarat, there have been ample suggestions of its breeding somewhere around. Non-flying juvenile birds were sighted near Navlakhi by S.D. Jadeja, P. Prunes and C. Briggs (pers. comm.) in February 1984. On 23 December 1984, when we saw more than 460

Lesser Flamingo in a saltpan northwest of Jalandar bet in the Little Rann of Kutch, there were 52 flying juveniles and 14 adults in one group. On 27 December 1985, we saw one non-flying juvenile west of Navlakhi. The suspicion has been that the main "Flamingo City" has been abandoned and split up into smaller breeding groups in the Little Rann, Great Rann and possibly elsewhere in the area.

This study reports a hitherto unknown site in Gujarat where the Lesser-Flamingo breeds.

### MATERIAL AND METHODS

In connection with our numerous studies in the Gulf of Kutch since September 1984, we often visited Surajbari and Cherwari (Cherowari). While interviewing fishermen there, we learnt about possible nesting of the Lesser Flamingo in a nearby area, which we specially visited on 20 March 1986, 10 June 1986, 19 June 1987, 19 July 1987, 22 June 1988 and 9 July 1988.

### STUDY AREA

The Little Rann of Kutch in Gujarat separates the district of Kutch from Rajkot and Surendranagar districts of the Saurashtra region. National Highway 8B and the broad gauge railway line from Saurashtra pass over two bridges

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built over the mouth of the Little Rann near Surajbari and Malia. Spread over both sides of the railway bridge on the Kutch side, is a seasonal fishing village called Cherwari (Fig. 1). A majority of the fishermen living here are from the nearby village of Surajbari. Cherwari has a landing site for prawn and fish on the north bank of the Hadakiya creek which joins the rann with the Gulf of Kutch. The tidal waters come through the main creek, flow under the bridges and past the village to circulate through anastomosing chan-

nels extending 3-4 km into the rann throughout the year. During the pre-monsoon (May and June) and monsoon (July to September), the height of the tidal water increases. Driven by winds, these waters spread further east into the rann. This, augmented by the rain water, fast turns the dry salt encrusted mudflat into damp ground and finally into a shallow marsh. During this period, Cherwari becomes a very important fishing village, and the entire flooded rann is intensively fished for prawns, especially *Metapenaeus kutchensis*

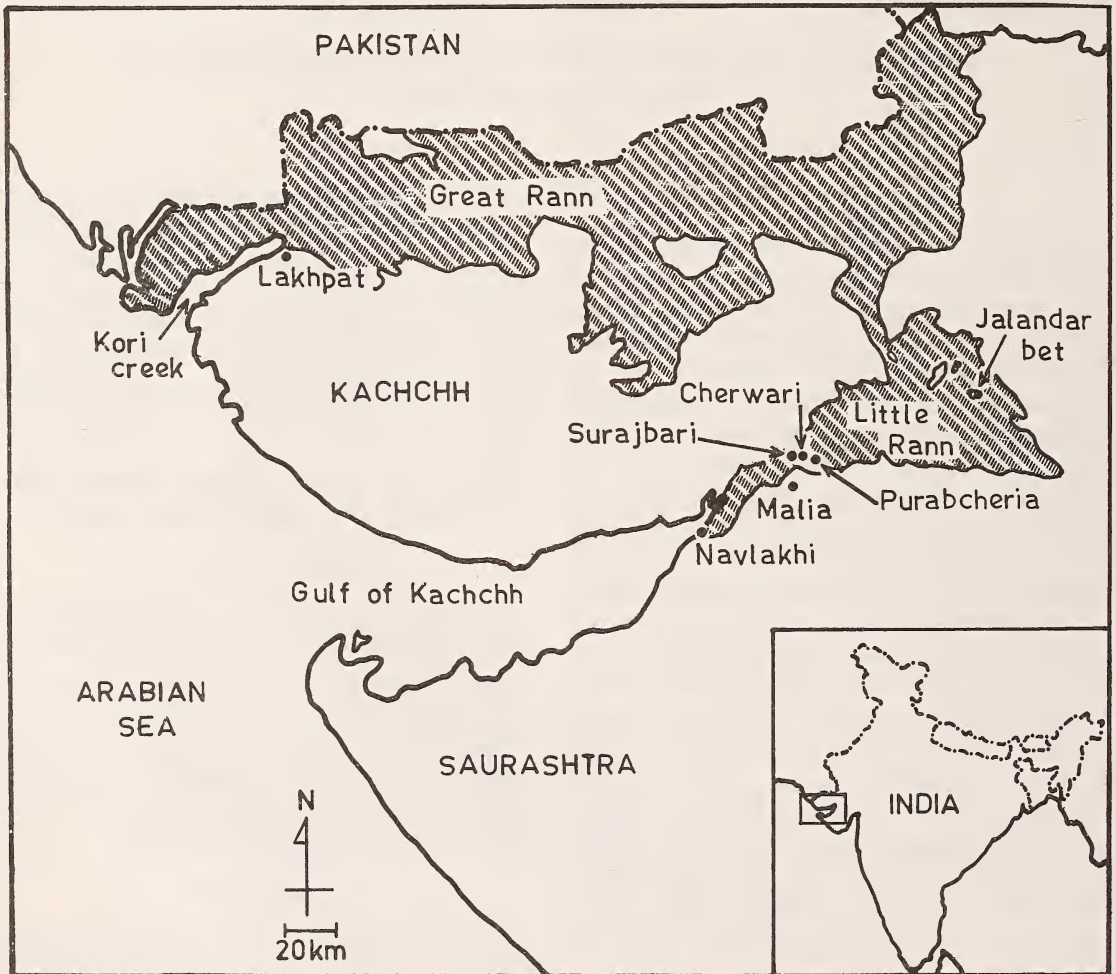


Fig. 1. Study area in Gujarat. Shaded area indicates Rann of Kutch. Inset shows map of India; rectangle indicates location of study area.

and *M. brevicornis* that abound and grow rapidly in the brackish water.

East of Cherwari, about 3 km into the rann, is a location known as Purabcheria (23°11'N, 70°46'E; Fig. 1); "purab" meaning the direction east, and "cheria" meaning mangrove vegetation, the latter possibly a reference to its past occurrence. Purabcheria is built on a slightly elevated area of silt. At present, the place has a few minor, irregularly placed mounds of mud, up to half a metre in height, overgrown with stands of coarse grass and a few stunted bushes of *Tamarisk* sp.; a little westward, there is a small but prominent stand of grass *Saccharum* sp. According to a fisherman the mounds of Purabcheria were originally produced by piles of mud that were removed while dredging channels by fishermen to bagnet prawns.

#### RESULTS

Fishermen of Cherwari revealed to us that at least two generations of fishermen have witnessed the nesting of Lesser Flamingo at Purabcheria. They nest in large numbers, laying a single egg per nest, the nest mound being called a "timbla". They also lay eggs directly on the grass mounds called "tekra". After the eggs are laid, occasionally the water level may rise, inundating the nesting colony. The eggs floating in water are collected and eaten by fishermen. Eggs are also collected from nests, and eaten in large numbers but are not usually sold. Though the birds lay eggs nearly every year, only one man claimed to have

seen young ones and eaten them. Fishermen in all the nearby fishing villages from Surajbari to Malia are aware of this colony and have eaten the eggs. The fishermen also kill and eat adult birds when possible, claiming that they walk up to them slowly and then strike at a bird with a long stick. Occasionally, persons from nearby villages, armed with guns, also come here to hunt. However, for the last three years (1985–1987), they have not seen any eggs though the birds have continued to gather here in astounding numbers. In June–July the birds disappear. It is claimed that the birds depart at night.

Since 1986, we visited the study area six times (Table 1). When we visited the area first on 20 March 1986, we saw no nest mounds in the vicinity of the site described above. There was only one Lesser Flamingo at the creekside and the fishermen said that it was too early in the season for the birds. During the visit on 10 June 1986 there were no birds and the fishermen said that the birds had flown off only a few days earlier. On 19 June 1987 when we visited the site again, there were 5 groups of 83 new nests. The total number of nests during our next visit on 19 July 1987 was 288, scattered about in 14 sub-groups in an area of 0.5 sq. km. Most of the groups were built on the edges and banks of narrow (0.5–1.0 m wide) channels (Plate 1). There were no signs of eggs, or remains of chicks in the nests to suggest that egg laying had taken place.

During our June 1987 visit, there were about 16,000 Lesser Flamingo in the area, and there

TABLE 1  
SUMMARY OF OBSERVATIONS AT THE BREEDING GROUNDS OF LESSER FLAMINGO AT PURABCHERIA

Date	No. of birds	No. of nests	Remarks
20 March 1986	1	0	Birds still to arrive.
10 June 1986	0	0	Birds migrated about 3 June 1986.
19 June 1987	16,000	83	No eggs laid.
19 July 1987	2,000	288	No eggs laid, 1 bird on nest, groups attending empty nests.
22 June 1988	9,000	123	No eggs laid.
9 July 1988	7,000	183	Eggs collected by fishermen.

were more, seen as a pink hue beyond clear vision on the horizon in the east. Most of the birds were standing and resting, preening and a few sitting on the ground. A few birds were engaged in feeding. During the July visit, the rann was wet, Mudskippers *Periophthalmus* sp. and crabs *Amphiuca inversa sindensis* were active in building their burrows. Further east of the flamingo colony, the land was covered with a sheet of water, this area being very slightly low lying as compared to Purabcheria. The number of Lesser Flamingo had now decreased to about 2000. Flamingo were also present in small numbers. When viewed from far away, small groups of 10–20 birds were seen standing and resting in and around the nests. One bird was actually resting on a nest. On our approach, they walked away to a nearby creek and rested there.

On 22 June 1988, when the site was visited, there were a total of 123 nests but no eggs were seen. The rains started in and around the Little Rann in the first week of July. Thereafter there were widespread rains in the area. Around 5 July, laying started, but the local fishermen collected the eggs immediately, so that on 9 July, except for a single egg in the water, all the nests were empty. One fisherman had a collection of 7 eggs, from which three eggs were taken to the laboratory and were blown. They measured on an average 78.7 x 49.7 mm.

On the last four visits, we saw flocks of birds, upto about 25 in number, walking in a tight flock, heads held up, necks taut and vertical. A few birds would flip their heads down suddenly, so that their bills would come in contact with the necks and then the heads would be lifted up again. After a few steps in one direction the whole group would change direction and continue to shuffle along. While a bird standing nearby would join the group, another would leave it, in no discernible order. This would continue for upto about 10 minutes and then the group would dissolve. Brown (1959) describes a similar courtship behaviour for this bird in East Africa, though there the birds would number a thousand or so in a group and the act would continue for a much

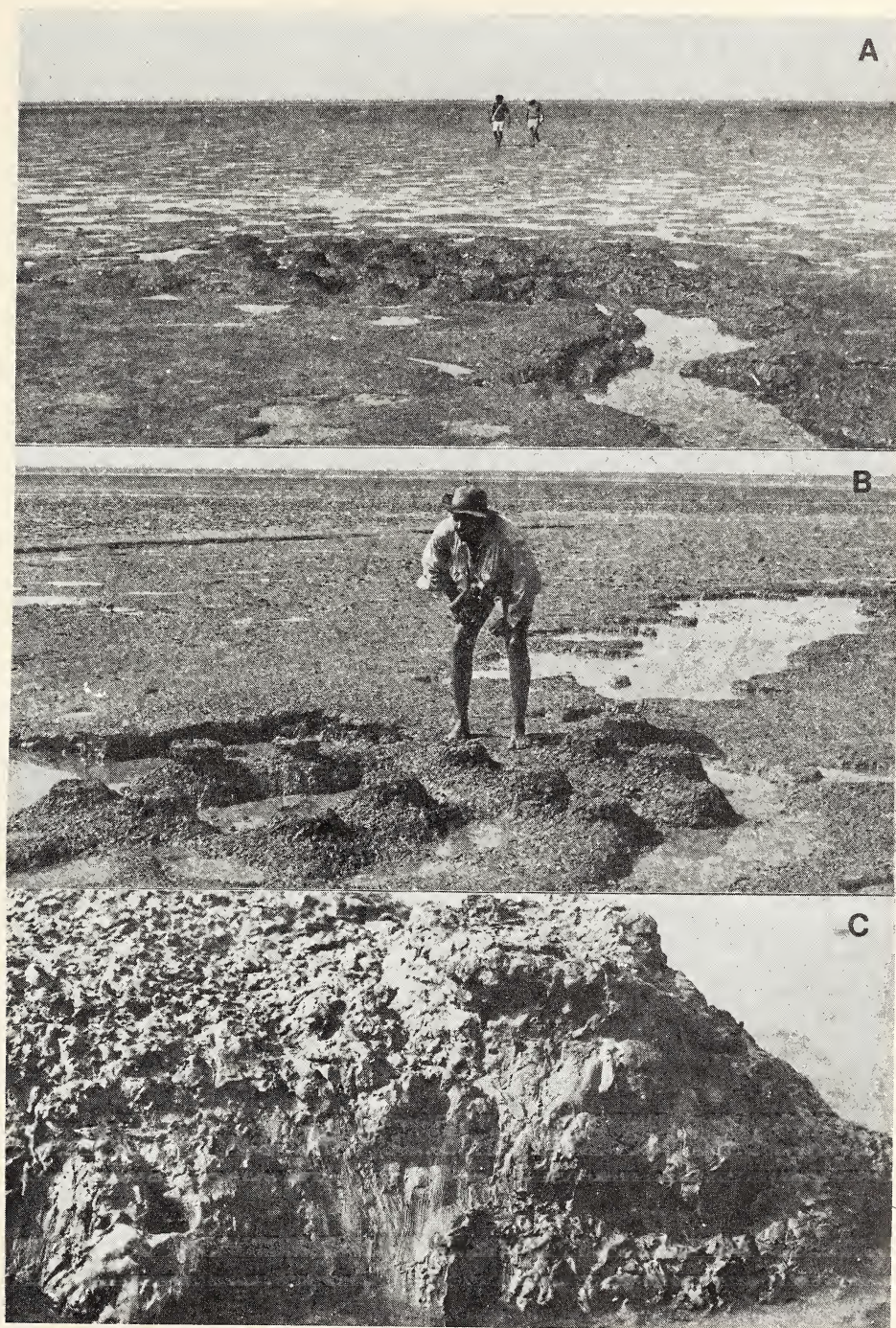
longer period.

During our visits to Cherwari and the surrounding area, we saw flamingo flying in small and large flocks to and fro between the rann and the gulf side. They were also arriving from further west. A majority of the birds that flew into the rann landed along the creekside very close to the jetty of Cherwari. They rested here and drank water from the puddles along the creek. The birds were not wary and a fisherman in a boat could approach them fairly close.

#### DISCUSSION

A large concentration of the Lesser Flamingo builds up around Cherwari in June–July. At least some of them make a nesting attempt at Purabcheria by building nests. In some years they even lay eggs, but whether the nesting ever succeeds is not clear. It is well known that flamingo desert their colony if disturbed, as they would be by egg collectors. This may be one reason why young have not been seen at the colony. It also seems possible that the chicks migrate *en masse* further east into the shallows of the rann, and develop there out of the view of human beings. In Africa, the chicks are known to march upto 30–50 km across mudflats to lagoons of permanent water (Brown *et al.* 1982). We feel that Purabcheria is the westernmost limit of the nesting colony in the rann. When the rann is flooded, a ground survey is not possible. Therefore, activities of the birds east of Purabcheria should be monitored by an aerial survey early during the monsoon every year.

After the monsoon breaks, the birds leave this area in July if the rains are not adequate. In 1986, just after the exodus of the flamingo from here, we happened to be at the north end of the Kori creek (Fig. 1). In the early hours of the morning and then just before dawn on 21 June 1986, flocks of Lesser Flamingo, some of them as many as 300 strong, were flying high and moving towards the northwest direction leading to Pakistan. This is also the general direction along the coast which leads to the known nesting grounds of flamingos—the soda lakes of East Africa. Nesting there



Nests of the Lesser Flamingo in the Little Rann of Kutch. (A) Overall view of a group of nests. (B) Close-up of a few nests built on a channel. (C) A single nest; note the marks (lower centre) of bill of the flamingo made during nest construction.